Statewide Standards for Timber Harvesting in Shoreland Areas

A report of the Department of Conservation's Maine Forest Service
to the
Joint Standing Committee on Agriculture, Conservation, and Forestry
Submitted in compliance with Resolves, Chapter 101 of the 120th Legislature
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INTRODUCTION

This report presents the recommendations of the Department of Conservation's (DOC) Maine Forest Service (MFS) regarding the development and implementation of statewide standards for timber harvesting in shoreland areas, as directed by the 120th Legislature (Resolves 2001, c. 101). The report builds upon a process initiated by the 118th Legislature (PL 1997, c. 648), continued by the 119th Legislature (PL 1999, c. 695), and presented to the 120th Legislature. This report further reflects the outcome of a four-month process in 2002, involving consultations with key stakeholders on a technical work group and with municipalities. Although many parties played a key role in the development of this report, the MFS takes full responsibility for its content.

In formulating its recommendations, MFS and the technical work group worked diligently to respect the four key goals expressed in the legislative resolve:

- Reduce inconsistencies in regulation;
- Make the regulations less prescriptive;
- Make the regulations more results oriented; and,
- Ensure balance with existing environment, land use, and forest protection laws.

The technical work group, composed of individuals representing a wide range of interests, met seven times between September and December, 2002. The group addressed several issues that either MFS or a group member identified as critical to success. As directed by the Legislature, the group used the MFS report to the 120th legislature as a starting point for much of the discussion, but also introduced for discussion new or related issues as identified by members of the group. In addition, MFS met twice with representatives of municipalities.

MFS attempted to reach consensus on nearly all of the recommendations contained in this report (though some were addressed outside the technical work group process). MFS tested consensus based on a scale of 1 (can't live with this) to 5

Why Statewide Standards?

A statewide, single agency enforced standard is reasonable, more equitable to all of the state's forest landowners, and encourages understanding and compliance by the regulated community. It also provides for the efficient and effective use of limited state resources. This sentiment has been expressed not only by previous Legislatures, but also by various study committees, including the Maine Council on Sustainable Forest Management (1996) and the Logger Licensing Technical Review Committee (1998). The Land and Water Resources Council also endorsed the concept of a statewide standard in its March 1999 communication to the Joint Standing Committee on Agriculture, Conservation, and Forestry (Richert, personal communication, 1999).

The current regulatory structure has a number of flaws that merit remedy. First, education of the regulated community is hampered by multiple, inconsistent laws, rules, and jurisdictions. Second, enforcement of the timber harvesting provisions of municipal shoreland zoning ordinances and state laws is uneven. LURC has six enforcement staff to address regulatory issues across its 10+ million acre jurisdiction. DEP has more, but still inadequate staff. Both state agencies and municipalities necessarily focus their enforcement activities on development issues, which generally have more permanent impact than timber harvesting activities, with the exception of roads. Both agencies have Memoranda of Agreement with MFS to provide initial enforcement services; however, violations must be significant in order for either agency to take any action.

(enthusiastic support). In assessing overall support for key elements of this report, all but one member of the technical work group indicated level 3 or 4 support (meaning they can live with and support the recommendations). The one exception was at the 2 level, indicating some substantive concerns. These concerns focused on some changes in regulations in the Department of Environmental Protection (DEP) jurisdiction and the timeliness of implementation at the municipal level.

SUMMARY OF KEY RECOMMENDATIONS AND ISSUES

A note on recommendations: **MFS recommendations appear in the report in bold, with a grey background.** All MFS recommendations also are packaged in a single document without accompanying background information.

1 - **MFS recommends that the Legislature pursue adoption of statewide standards for timber harvesting in shoreland areas, as outlined in the following recommended standards and contingent upon the resolution of several key issues, identified below.**

2 - Implementation and timing remains a key issue in the adoption of statewide timber harvesting standards. Stakeholders have legitimate concerns about the implementation of these recommendations. MFS shares many of these concerns. **MFS recommends that the standards not take effect until at least 6 months after a critical mass of towns adopts them. The same timeline would apply to the LURC jurisdiction. MFS would like to discuss the implementation timeline with the committee to resolve key issues such as what constitutes a "critical mass."** If a critical mass of municipalities does not adopt the recommended standards, it makes little sense to impose them on the LURC jurisdiction, as landowners with holdings in multiple jurisdictions will continue to face different regulatory standards. Further, landowners in the LURC jurisdiction will be justified in their perception that they have subjected themselves to additional regulation without any promise of consistency or stability.

3 - **Although legitimate differences exist between the regulations governing timber harvesting in shoreland areas in the jurisdictions of the DOC's Land Use Regulation Commission (LURC)[1] and the Department of Environmental Protection (DEP)[2], many differences can be and should be reconciled.** MFS makes several recommendations in this report regarding the reconciliation of specific standards.

4 - **If adequate resources are maintained in the agency, MFS is the logical agency to enforce a statewide standard. MFS does not support having primary enforcement responsibility unless the differences in regulations identified in this report are reconciled and a significant number of municipalities adopt the recommended standards.**

[1] Aka the unorganized towns.
[2] Aka the organized towns.

IMPLEMENTATION

Implementation of statewide timber harvesting standards will involve a number of key actions. Several issues remain that require affirmation and/or resolution by the Legislature and key stakeholders before a statewide standard for timber harvesting can become effective. These issues are outlined below:

1- Changes to existing laws and rules

2- Adoption of the statewide standards by municipalities

3- Affirmation of an MFS enforcement policy

4- Adequacy of MFS enforcement resources

In each of these issues, timing of any changes in regulations, whether wholly or in part, is a fifth issue that is difficult to separate but warrants consideration.

1- Changes to existing laws and rules

The legislative Resolve directed that "[t]he final report must include proposed changes to existing laws and rules necessary to implement the regulatory framework and implementation plan." **If the Legislature accepts these recommendations, the following titles and sections of existing laws and rules will require change:**

- 38 MRSA, § 439-A, sub-§ 5 (repeal)
- 38 MRSA, § 436-A, sub-§ 11-A (amendment)
- 38 MRSA, § 436-A, sub-§ 13 (amendment)
- 38 MRSA, § 480-B, sub-§ 2-B (amendment)
- 38 MRSA, § 480-B, sub-§ 9 (amendment)
- 38 MRSA, § 480-E2, (new, delegation of authority to MFS)
- 38 MRSA, § 480-Q, sub-§ 7-A (amendment)
- 38 MRSA, § 480-R, sub-§ 2 (amendment)
- 12 MRSA, § 685-C, sub-§ 8 (amendment)
- 12 MRSA, § 8868, (amendment)
- Land Use Regulation Commission Rules and Standards, Section 10.01 (amendment)
- Land Use Regulation Commission Rules and Standards, Section 10.17 (amendment)
- Department of Environmental Protection Chapter 1000 Rules (amendment)
- Department of Environmental Protection Chapter 305 Rules (amendment)

Based on direction from the 121st Legislature's Joint Standing Committees on Agriculture, Conservation, and Forestry and Natural Resources, other sections of law

and rule may also require change. MFS will develop recommended statutory and rule changes on request.

These changes would need to occur in whole or in part, in conjunction with the adoption of the statewide standards (or relevant portions), and their adoption by municipalities. If the Legislature accepts the recommendations in this report, **MFS proposes to develop amendments first to the DEP's Shoreland Zoning Guidelines (Chapter 1000 Rules) to facilitate municipal adoption.**

2- Adoption of statewide standards by municipalities

The legislative resolve directed that "[t]he regulatory framework and implementation plan must allow municipalities to voluntarily accept the Maine Forest Service's authority for enforcement of timber harvesting standards in shoreland areas," and that MFS "shall involve municipalities concerning their interests in developing and accepting greater statewide consistency of laws governing timber harvesting in shoreland areas."

The Mandatory Shoreland Zoning Act, 38 MRSA, § 435-449, requires all municipalities to adopt, administer, and enforce ordinances which regulate land use activities within 250 feet of great ponds, rivers, freshwater and coastal wetlands, and tidal waters; and within 75 feet of steams as defined. The act also requires the Board of Environmental Protection to establish minimum guidelines for such ordinances. The Act requires that municipalities adopt shoreland zoning ordinances consistent with, or no less stringent than, those minimum guidelines (Chapter 1000 Rules, Guidelines for Municipal Shoreland Zoning Ordinances). All towns have a Shoreland Zoning ordinance in place. Many ordinances are taken verbatim from the state guidelines, and the BEP has adopted ordinances for a number of towns that did not adopt ordinances in compliance with the mandate. A small number of ordinances are stricter than state guidelines.

MFS recommends providing municipalities with two options to achieve statewide consistency:

1 – Either repeal the sections of existing shoreland zoning ordinances that govern timber harvesting and cede enforcement authority to MFS (preferred); or,

2 – Amend existing shoreland zoning ordinances to bring the ordinances into conformity with the recommended statewide standards.

If a municipality chooses to amend its existing ordinance to be consistent with the recommended statewide standards, MFS would provide enforcement and technical assistance to municipalities, or, by memorandum of agreement, would enforce the timber harvesting provisions of the ordinance. These services would not be available to municipalities that chose to retain their existing ordinances or to adopt ordinances not in conformity with the recommended statewide standards.

One of the key challenges, if not the key challenge, to successful implementation of a statewide standard for timber harvesting in shoreland areas is the attainment of a critical mass of towns that choose one of the two options outlined above. If a significant number of towns fail to exercise one of the options, then the goal of a statewide standard will not be achieved.

MFS recommends that the standards not take effect until 6 months after a critical mass of towns adopts them. The same timeline would apply to the LURC jurisdiction. MFS would like to discuss the implementation timeline with the committee to resolve key issues such as what constitutes a "critical mass." If a critical mass of municipalities does not adopt the recommended standards, it makes little sense to impose them on the LURC jurisdiction, as landowners with holdings in multiple jurisdictions will continue to face different regulatory standards. Further, landowners in the LURC jurisdiction will be justified in their perception that they have subjected themselves to additional regulation without any promise of consistency or stability.

As noted above, the timing of adoption of statewide timber harvesting standards is significantly affected by the issues surrounding municipal adoption. The earliest possible time for municipalities to address the recommended standards would be at 2004 town meetings. MFS believes that the Legislature should provide ample time for a significant number of towns to opt into the new system before any changes at the local, LURC, or state levels take effect. **If the Legislature adopts the recommendations of this report, MFS strongly urges the Legislature not to make further changes to the standards during the implementation period.**

3- Affirmation of an MFS enforcement policy

Discussions at technical work group meetings often focused on the issues of enforcement, regulatory discretion, and a "reasonableness" standard for identifying and resolving violations. Specific examples included the deposition of slash into intermittent or small, first-order streams during winter operations, when the stream channel may not be visible and the operation of machinery in or near these same channels during conditions not favorable to their identification.

LURC, DEP, and MFS have a tiered approach to enforcement that involves an evaluation of the seriousness of the discharge and includes obtaining remedial action without prosecution. This philosophy can best be explained as follows:

- Education, prevention and avoidance of problems first;
- When small problems are identified, fix them;
- Do not impose financial penalties for small problems and/or first time violators;
- Seek additional remedies, including financial penalties, for large problems and/or repeat violators.

Furthermore, portions of the purpose statement of the statewide standards have been modified to reflect an emphasis on flexible regulations and education as preferred approaches to improving forest practices. At the same time, the "reasonableness" standards should not and will not be interpreted as allowing willful violators to operate with impunity nor to permit cumulative degradation of natural resources. MFS has acknowledged that the transition to a statewide standard would involve considerable education and training of all concerned. Should the Legislature endorse the recommendations in this report, MFS would continue to apply these philosophies, both in policy and in practice.

4- Adequacy of MFS enforcement resources

MFS staff currently assist in enforcement of water quality regulations under memoranda of agreement with DEP and LURC. MFS involvement focuses on resolving minor problems on site; larger problems are referred to LURC or DEP. Although there are likely to be unforeseen costs and demands on resources, a shift of sole responsibility to MFS can be accommodated, as some efficiencies are likely to be gained by enforcement of a single, statewide standard. However, if MFS must reduce or reallocate staff to address current state budget constraints, MFS would be very concerned about its resource capabilities and would need to revisit this issue.

MUNICIPAL ISSUES[3]

The Maine Municipal Association (MMA) had a representative on the Technical Work Group, but MFS also met separately several times with MMA staff and municipal officials to discuss municipal perspectives on statewide standards. During consultations with MFS, MMA identified a number of issues of concern to municipalities. The issues and their potential resolutions are outlined below.

1 - Post-harvest development: Municipalities and others have observed that timber harvesting in the shoreland area often precedes shoreline development. The remaining riparian forest may be compromised by this development. Consequently, some municipal officials believe the timber harvesting standards should be made more stringent. The recommended statewide standards are perceived as (and in some towns may be in fact) less stringent than current shoreland zoning.

MFS recognizes that development sometimes follows timber harvesting in shoreland areas, particularly – but not always – in organized towns. However, municipalities currently have the authority to regulate shoreline development via direct oversight of construction, road building, and other development activities by their Code Enforcement Officers and town Planning Boards, as provided in Municipal Shoreland Zoning. Individual towns have the power to make such restrictions more stringent than required by state law, including, but not limited to, the power to prohibit the issuance of building permits where vegetative cover in the shoreland area does not meet a certain standard.

MFS and other members of the technical working group expressed the view that legitimate timber harvesting activities should not be subject to more stringent regulation because of development concerns, nor would MFS support such measures. Such regulations would likely be counterproductive to the goal of maintaining forest cover in shoreland areas, since increasing the regulatory burden on traditional land uses such as forest management appears to be a key driver in the loss of such lands to development.

As such, a significant difficulty lies in defining when a timber harvesting operation actually results in development. At present, many town officials find that timber harvesting in shoreland areas creates conditions that not only promote development but also leave code enforcement officers and planning boards with few options for

[3] Some of these issues were not specifically discussed with the Technical Work Group; however, all were discussed in depth with MMA officials.

controlling or precluding that development. MFS suggests that towns with these concerns consider amendments to the development-related sections of their shoreland zoning ordinances to give municipal officials additional tools to discourage development following aggressive timber harvesting.

2 - Transition costs to municipalities: Towns are concerned about the potential costs associated with transitioning to the statewide standards. In accordance with Resolve 101, towns retain their existing authority to develop and enforce ordinances regulating timber harvesting in shoreland areas. There is no cost associated with maintaining the status quo. Towns that chose to amend or repeal the timber harvesting provisions of shoreland zoning ordinances may incur minor costs associated with any required local public hearings. However, these towns could realize significant savings over time by having MFS assume full or shared enforcement responsibility. In fact, several other towns have expressed interest in having MFS enforce statewide standards for this reason.

3 - Outcome-based standards: Towns are wary of the option allowing an outcome based approach to regulation of timber harvesting in shoreland areas. The rule originally proposed by MFS - and the standards recommended in this report - would allow a landowner to propose "[a]n alternative method … in an application, signed by a Licensed Professional Forester or certified wildlife professional, … to the Bureau and approved by the Bureau, that provides equal or better protection of the shoreland area than these rules." Such proposals could apply to an ownership, a watershed, or a single operation, depending on the situation.

Previous legislatures have clearly directed MFS to develop standards that allow for operational flexibility and have signaled their support of MFS developing more outcome based approaches to regulation.

MFS assures readers of this report that it would apply a high level of rigor to the review of any proposal by a landowner electing to try an outcome based approach. Further, for applications applying to a single town or a single harvest, MFS would provide municipalities with the opportunity to comment on the proposal before rendering a decision. In effect, the process would be similar to an exemption provided for in state Mandatory Shoreland Zoning, whereby a licensed forester may apply to the local planning board to exceed shoreland zoning requirements.

In addition to offering municipalities the opportunity to comment on town-specific proposals, MFS is considering two other options to address municipal concerns, and seeks legislative guidance:

1 – Allow the outcome based option only in the LURC jurisdiction (preferred). Outcome based forestry has the greatest potential for success at landscape scales, such as entire townships or watersheds. It has less application at smaller scales, such as individual small parcels.

2 – Allow towns the choice in the Shoreland Zoning guidelines to incorporate this option into their Shoreland Zoning ordinances.

4 - The "40% rule": Towns and some of the regulated community are comfortable with, and would like to retain, the existing standard that allows harvest of 40% of the timber

volume in a ten year period in certain shoreland areas. Last year, MFS proposed a 5-year sunset period for this standard. The regulated community and municipalities expressed concerns about the sunset provision, largely because of their high comfort level with this existing standard. The 40% rule has been retained in the recommended standards. MFS notes, however, that the retention of this standard will complicate enforcement actions, because the 40% rule becomes difficult to enforce when multiple harvests take place in the same area within a 10-year period.

4 - More timely, prior notification to towns of harvesting in shoreland areas: All Forest Operations Notifications are copied to towns (12 MRSA § 8883); however, the mailings were not specifically addressed to the Code Enforcement Officer. At the request of MMA and town officials, MFS has modified the mailing label to direct all notifications to the attention of the Code Enforcement Officer.

5 – MFS enforcement capabilities

Several towns are very concerned about MFS's ability and willingness to enforce statewide timber harvesting standards. Some town officials have asserted that MFS is not sufficiently aggressive in its enforcement or does not have the ability to respond in a timely manner to alleged violations.

MFS staff are currently charged with enforcement of a range of existing state forest protection laws. However, MFS staff do not currently have direct enforcement responsibility or authority for existing laws and rules governing timber harvesting in shoreland areas. Under current memoranda of agreement with DEP and LURC, MFS can recommend correction of violations, but must refer cases to these agencies for enforcement action (e.g., consent agreements and/or fines). This may result in delays due to limited staff at those agencies.

MFS has more personnel and communications infrastructure available to address water quality problems resulting from timber harvesting in a timely way than DEP and LURC combined. MFS staff are also typically better equipped to deal with timber harvesting issues.

MFS staff currently investigate complaints from a wide variety of sources, including town officials. These local sources of assistance often play a significant role in identifying issues and would continue to play an important role in the enforcement of statewide timber harvesting standards. To date, MFS staff have, per agency policy, declined to accept responsibility in town-initiated enforcement actions of local ordinances, which may account for some concerns about MFS responsiveness. However, direct MFS enforcement of statewide standards (with local assistance where towns desire to retain some role) would provide staff with considerable additional flexibility and efficiency in achieving compliance and/or pursuing enforcement. At the same time, direct MFS enforcement of timber harvesting standards could free up local officials to focus on land uses of more immediate concern, especially development.

In sum, if the recommended statewide standards are adopted by a significant number of municipalities and MFS is granted full enforcement authority, MFS believes that municipalities would see their concerns addressed.

SPECIFIC STANDARDS

The following section provides a brief overview of specific issues and recommendations for changes to existing standards to achieve the four key goals expressed in the legislative resolve. The graphic shown in Figures 1-3 outlines some of the key recommendations.

Purpose Statement

MFS and the technical work group discussed regulatory agencies' enforcement policies at length. The discussion focused on how much guidance to provide and how much discretion to leave to regulatory staff. MFS believes that providing the following policy guidance in the purpose statement strikes an appropriate balance between putting more prescriptive enforcement guidelines in law and providing no guidance at all. Guidance in the purpose statement, coupled with existing agency policy seems sufficient to guide the agency in its enforcement efforts.

Based on discussions with the technical work group, MFS recommends the following purpose statement for any rule that is adopted to implement the recommendations in this report:

> **"The purpose of this rule is to establish statewide standards for timber harvesting activities in shoreland areas throughout the state; to resolve inconsistencies among existing standards; to provide maximum opportunity for flexibility; to protect public resources while minimizing impacts on private resources; to further the maintenance of safe and healthful conditions; to prevent and control water pollution from various agents, including sediment, temperature, toxic materials, and excessive nutrient inputs; to maintain shoreline stability; to protect fish spawning grounds, aquatic life, bird and other wildlife habitat; to protect freshwater and coastal wetlands; and to conserve natural beauty, ~~and~~ open space, and public recreational values.**
>
> **The agency's emphasis in applying this rule is to educate and seek continuous improvement among the regulated community to prevent and avoid violations before they occur, and to provide standards by which the regulated community will comply and properly interpret the rules. Enforcement of this rule will include a range of actions depending on the severity and number and occurrences of infractions and the consideration of good-faith efforts to comply with this rule."**

Definitions[4]

The definitions of various terms in the various laws and rules differ to a surprising extent. For example, LURC defines a

➔ **stream channel** as "[a] channel between defined banks created by the action of surface water and characterized by the lack of terrestrial vegetation or by the presence of a bed, devoid of topsoil, containing waterborne deposits or exposed soil parent material or bedrock.

DEP's Shoreland Zoning Guidelines, on the other hand, defines a

➔ **stream** as "a free-flowing body of water from the outlet of a great pond or the confluence of two (2) perennial streams as depicted on the most recent edition of a United States Geological Survey 7.5 minute series topographic map, or if not available, a 15-minute series topographic map, to the point where the body of water becomes a river or flows to another water body or wetland within the shoreland area."

DEP's Shoreland Zoning Guidelines further define a

➔ **tributary stream** as "a channel between defined banks created by the action of surface water, whether intermittent or perennial, and which is characterized by the lack of upland vegetation or presence of aquatic vegetation and by the presence of a bed devoid of topsoil containing waterborne deposits on exposed soil, parent material or bedrock, and which flows to a water body or wetland as defined. This definition does not include the term "stream" as defined elsewhere in this Ordinance, and only applies to that portion of the tributary stream located within the shoreland zone of the receiving water body or wetland."

As another example, DEP's Shoreland Zoning Guidelines define a

➔ **river** as "a free-flowing body of water including its associated flood plain wetlands from that point at which it provides drainage for a watershed of twenty five (25) square miles to its mouth."

The Natural Resources Protection Act (38 MRSA § 480-B, sub-§ 9) defines a

➔ **river, stream or brook** as "a channel between defined banks. A channel is created by the action of surface water and has 2 or more of the following characteristics.

- It is depicted as a solid or broken blue line on the most recent edition of the U.S. Geological Survey 7.5-minute series topographic map or, if that is not available, a 15-minute series topographic map.
- It contains or is known to contain flowing water continuously for a period of at least 3 months of the year in most years.
- The channel bed is primarily composed of mineral material such as sand and gravel, parent material or bedrock that has been deposited or scoured by water.
- The channel contains aquatic animals such as fish, aquatic insects or mollusks in the water or, if no surface water is present, within the stream bed.
- The channel contains aquatic vegetation and is essentially devoid of upland vegetation.

[4] This item was not addressed by the technical work group.

River, stream or brook does not mean a ditch or other drainage way constructed, or constructed and maintained, solely for the purpose of draining storm water or a grassy swale."

LURC, on the other hand, uses the term

➔ **flowing water**, defined as [a] "surface water within a stream channel that has a perceptible flow and is substantially permanent in nature. Such waters are commonly referred to as rivers, streams, and brooks."

These are just a few examples of the unnecessary and often confusing differences among the definitions in state laws and rules that, sometimes, can mean the difference between whether and where a resource is subject to regulation.

MFS recommends that the definitions of terms in any new rules and amended rules and laws be standardized. For example, in the originally proposed rules, MFS collapsed the definitions of rivers, streams, brooks, flowing waters, etc., to a single term:

➔ **stream channel:** "a channel between defined banks created by the action of surface water, which is characterized by the lack of terrestrial vegetation or by the presence of a bed, devoid of topsoil, containing waterborne deposits or exposed soil parent material or bedrock; and which is connected hydrologically and continuously with higher-order streams or other water bodies. "Stream channel" does not include rills or gullies forming as a result of accelerated erosion in disturbed soils where the natural vegetative cover has been removed by human activity."

Simply defining terms consistently would go far toward achieving the goal of regulatory simplicity and efficiency.

Shoreland Areas

The current regulatory systems in the LURC and DEP jurisdictions have different regulatory thresholds at which certain standards apply (see Table 1). For example, the change from a 75 foot buffer to a 250 foot buffer occurs at the 50 square mile drainage point in the LURC jurisdiction, but at the 25 square mile drainage point in the DEP jurisdiction. LURC allows certain exceptions to standards above the 300 acre drainage point (see box); however, no such analog exists in the DEP jurisdiction. These threshold differences are deeply entrenched in the cultures of the regulated community in both jurisdictions, and making significant, immediate changes to them seemed to pose the greatest barrier to the success

The 300 acre threshold

The smallest streams are often very difficult to locate and therefore to protect during harvesting operations, particularly in winter. In some cases, such streams may be unmapped, flow only intermittently, or may have ill-defined channels. Conversely, such streams may also be mapped, flow much of the year, and have well-defined channels

Also, winter harvesting operations are a Best Management Practice in that such operations protect the soil from excessive disturbance. Requiring regulatory buffers on such streams could have the counterproductive effect of discouraging winter operations.

This reasoning explains why LURC rules exempt harvesting from certain standards (e.g., the "section g" exemption. Harvesting operations can take place in and around such small stream channels as long as unreasonable sedimentation does not occur.

The proposed standards extend this exemption to the DEP jurisdiction; however, with more outcome based standards proposed for the smallest streams (e.g., shoreline integrity, slash, shade), the net effect is likely an improvement in protection of these important headwaters.

of this effort. The technical work group agreed that it was more important to focus on the standards and try to reach agreement there than to focus on where the standards would apply.

MFS recommends maintaining – in large part – the existing regulatory thresholds, as defined below.

"Shoreland area means all land areas within:

A. 250 feet, horizontal distance, of the normal high water mark of streams below the 50 square mile drainage point in the LURC jurisdiction (aka P-SL1), below the 25 square mile drainage point in the DEP jurisdiction, and ponds and freshwater wetlands 10 acres or larger, any coastal or tidal wetland, or any size pond or freshwater wetland rated as significant wildlife habitat or essential wildlife habitat statewide.

B. 75 feet, horizontal distance, of the normal high water mark of streams between the 300 acre drainage point and the 50 square mile drainage point in the LURC jurisdiction, between the beginning of second order streams and the 25 square mile drainage point in the DEP jurisdiction.

C. The immediate vicinity of the normal high water mark of streams above the 300 acre drainage point in the LURC jurisdiction, above the beginning of second order streams in the DEP jurisdiction, and ponds or freshwater wetlands larger than 4,300 square feet but less than 10 acres that are not rated as significant wildlife habitat or essential wildlife habitat in both jurisdictions."

Table 1. Current regulatory thresholds

Buffer Width	Applies to in LURC	Applies to in DEP
0'	Headwaters to 300 acre drainage point, most wetlands smaller than 10 acres	Headwaters to beginning of 2nd order stream, most wetlands smaller than 10 acres
75'	300 acre drainage point to 50 square mile drainage point	Beginning of 2nd order stream to 25 square mile drainage point
250'	50 square mile drainage point to sea, wetlands and ponds ≥ 10 acres, tidal waters	25 square mile drainage point to sea, wetlands and ponds ≥ 10 acres, tidal waters

Slash treatment

Regulations governing the treatment of slash in the shoreland area have been in LURC rules since 1972 and DEP rules since 1973. The regulations address water quality, public safety, aesthetic, and recreational issues, with the importance of each varying with the size of the water body. Slash in water bodies can reduce dissolved oxygen levels and can have undesirable impacts on stream morphology. Public safety, aesthetic and recreational values become more important on larger water bodies.

MFS recommends that the following standards be applied statewide:

1 - **No accumulation of slash shall be left within 50 feet of the normal high water mark of a water body protected by the P-SL1 and P-GP Protection Subdistricts, and tidal waters in the LURC jurisdiction; and Great Ponds, rivers, and wetlands larger than 10 acres, and tidal waters in the DEP jurisdiction. Slash used to protect soil from disturbance by equipment or to stabilize exposed soil may be left in place.**

2 - **Between 50 feet and 250 feet of the normal high water mark of a water body identified in (1) above, all slash larger than 3 inches in diameter must be disposed of in such a manner that no part thereof extends more than 4 feet above the ground. Slash used to protect soil from disturbance by equipment or to stabilize exposed soil may be left in place.**

3 - **Timber harvesting activities shall be conducted such that slash or debris is not left below the normal high water mark of any water body. This section does not apply to incidental amounts of slash that result from normal timber harvesting activities otherwise in compliance with this section.**

4 - **Slash means the residue, e.g., treetops and branches, left on the ground after a timber harvest.**

The recommended standards allow slash to be used to protect soil from harvesting operations. The standards could be considered more restrictive in LURC jurisdiction above 300 acre drainage point; however, the existing LURC exemption (section 10.17 a, 5, g of LURC rules) is inconsistent with the prohibition in state law. The proposed exception for “incidental” slash allows for common sense and regulatory discretion and results in little, if any change to the status quo.

Tree diameter (DBH)[5] standards

Regulations affecting timber harvesting in shoreland areas often specify tree removal or retention standards, based on the diameter of trees at 4.5 feet from the ground (DBH). For example, the tree retention standard in DEP's shoreland zoning guidelines limits removals in certain areas to "[s]elective cutting of no more than forty (40) percent of the total volume of trees four (4) inches or more in diameter measured at 4 1/2 feet above ground level on any lot in any ten (10) year period…" Such standards address water quality, riparian zone wildlife, recreational, and aesthetic issues.

The minimum tree diameters vary a fair bit among the existing regulatory frameworks. LURC bases its standards on 6 inch DBH trees. The DEP's Natural Resources Protection Act and Shoreland Zoning standards are based on 4 inch DBH trees. The Forest Practices Act (FPA) bases its standards on 4.5 inch DBH trees. The MFS standard is based on product merchantability standards.

MFS recommends that where a timber harvest volume removal limitation applies in both Shoreland Zoning and LURC, the minimum DBH should be standardized at 4.5 inches. This would bring consistency to the removal standards statewide, and would have the added benefit of being roughly in line with FPA clearcut separation zone standards, which could encourage land managers to leave larger, more effective riparian zones under certain situations.

Shoreline integrity

Disturbing the banks and channels of water bodies can result in unreasonable and chronic erosion, sediment delivery and movement, disturbance of fish redds, excessive turbidity, and negative impacts on channel morphology. Current standards address this issue in more prescriptive terms. **MFS recommends that the following, outcome based standard apply statewide:**

> **"Timber harvesting activities in shoreland areas must take reasonable measures to avoid the occurrence of sedimentation of water and the disturbance of stream banks, stream channels, shorelines, and soil lying within ponds and wetlands. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party."**

[5] DBH means the diameter of a tree measured at 4-1/2 feet from the ground.

Shade and tree retention

Timber harvesting standards governing shade, tree retention and cleared openings serve several purposes and achieve many of the public policy goals articulated in existing laws and rules. Such standards help:

- provide for a minimum level of tree cover to prevent excessive heating and cooling of surface waters;
- assure stream bank and stream channel stability;
- provide a continuous supply of large woody material and fine organic matter to the water body and adjacent areas;
- retain a travel corridor along a shoreline for a range of wildlife species; and,
- provide for a minimum level of vegetative cover to specialized organisms, including aquatic insects and amphibians that use the riparian areas and channels of smaller streams for a portion of their life cycles.

Such standards also protect aesthetic and recreational values, particularly on larger water bodies. The relative importance of each of the issues mentioned above differs with the size of the water body and sometimes among water body of the same relative size. For example, shading of surface waters can be very important on small streams and water bodies, whereas shade becomes largely irrelevant on larger rivers and ponds. Conversely, along larger rivers and ponds, relatively wide riparian forests with acceptable post-harvest tree cover provide important wildlife travel corridors, whereas smaller streams do not need such wide buffers.

A number of stakeholders expressed concerns about development following timber harvesting, particularly in the DEP jurisdiction, and the more permanent nature of any reduction in riparian tree cover that tends to characterize shoreland development. MFS recognizes and acknowledges the legitimacy of these concerns. However, MFS believes that these concerns can be dealt with by other means (see earlier section), not through increased regulation of timber harvesting.[6]

Based on careful consideration of the available scientific literature, existing standards, and the concerns of all interests, MFS makes the following recommendations. Because the recommendations differ slightly between the LURC and DEP jurisdictions, the recommendations are shown for each.

I. LURC jurisdiction

A. Timber harvesting activities in shoreland areas of P-SL1 streams (250 foot buffer), P-SL2 streams below the 25 square mile drainage point (75 foot buffer), all ponds and wetlands 10 acres and larger and tidal waters (250 foot buffer) must leave adequate tree cover and shall be conducted so that a well-distributed stand of trees is retained. For the purposes of this section, adequate tree cover is defined as one of the following three options:

[6] This report addresses the issue of land management roads in a later section.

1. **Harvesting of no more than 40 percent of the total volume on each acre involved of trees 4.5 inches DBH or greater in any 10 year period is permitted. The residual stand must be windfirm, and a well-distributed stand of trees and other vegetation, including existing ground cover, must be maintained. For the purposes of these standards volume may be considered to be equivalent to basal area; or**
2. **The residual stand must be windfirm and contain an average basal area of at least 60 square feet per acre of woody vegetation greater than or equal to 1.0 inch DBH, of which 40 square feet per acre must be greater than or equal to 4.5 inches DBH; or**
3. **An alternative method proposed in an application, signed by a Licensed Professional Forester or certified wildlife professional, from the landowner or designated agent to the Bureau and approved by the Bureau, that provides equal or better protection of the shoreland area than these rules.**

Landowners must designate on the Forest Operations Notification form required by 12 MRSA, chapter 805, subchapter 5 which option they choose to use. If landowners choose Option 1 or Option 2, compliance with this section will be determined solely on the criteria for those options. If landowners choose Option 3, timber harvesting activities may not begin until the bureau has approved the required application.

In addition, for Options 1 and 2 above, within 75 feet, horizontal distance, of the normal high water mark of shoreland areas regulated under this section, there must be no cleared openings and a well-distributed stand of trees and other vegetation, including existing ground cover, must be maintained. At distances greater than 75 feet, horizontal distance, of the normal high water mark, timber harvesting activities must not create single cleared openings greater than 14,000 square feet in the forest canopy. Where such openings exceed 10,000 square feet, they must be at least 100 feet apart. Such cleared openings will be included in the calculation of total volume removal. For the purposes of these standards volume may be considered to be equivalent to basal area.

B. Timber harvesting activities in shoreland areas of P-SL2 streams below the 300 acre drainage point but above the 25 square mile drainage point, and of all ponds and wetlands larger than 4,300 square feet but less than 10 acres (75 foot buffer) must be conducted to retain sufficient vegetation to maintain shading of surface waters.

DEP jurisdiction

A. Timber harvesting activities in shoreland areas of streams and rivers below the beginning of second order streams (75 foot buffer to the 25 square mile drainage point, 250 foot buffer below), ponds and wetlands 10 acres and larger and tidal waters (250 foot buffer) must leave adequate tree cover and shall be conducted so that a well-distributed stand of trees is retained. For the purposes of this section, adequate tree cover is defined as one of the following three options:

1. **Selective cutting of no more than 40 percent of the total volume on each acre involved of trees 4.5 inches DBH or greater in any 10 year period is permitted. The residual stand must be windfirm, and a well-distributed stand of trees and other vegetation, including existing ground cover, must be maintained. For the purposes of these standards volume may be considered to be equivalent to basal area; or**
2. **The residual stand must be windfirm and contain an average basal area of at least 60 square feet per acre of woody vegetation greater than or equal to 1.0 inch DBH, of which 40 square feet per acre must be greater than or equal to 4.5 inches DBH; or**
3. **An alternative method proposed in an application, signed by a Licensed Professional Forester or certified wildlife professional, from the landowner or designated agent to the Bureau and approved by the Bureau, that provides equal or better protection of the shoreland area than these rules.**

Landowners must designate on the Forest Operations Notification form required by 12 MRSA, chapter 805, subchapter 5 which option they choose to use. If landowners choose Option 1 or Option 2, compliance with this section will be determined solely on the criteria for those options. If landowners choose Option 3, timber harvesting activities may not begin until the bureau has approved the required application.

In addition, for Options 1 and 2 above, within 75 feet, horizontal distance, of the normal high water mark of shoreland areas regulated under this section, there must be no cleared openings and a well-distributed stand of trees and other vegetation, including existing ground cover, must be maintained. At distances greater than 75 feet, horizontal distance, of the normal high water mark, timber harvesting activities must not create single cleared openings greater than 14,000 square feet in the forest canopy. Where such openings exceed 10,000 square feet, they must be at least 100 feet apart. Such cleared openings will be included in the calculation of total volume removal. For the purposes of these standards, volume may be considered to be equivalent to basal area.

Timber harvesting in shoreland areas of streams between the 300 acre drainage point and the beginning of second order streams and wetlands larger than 4,300 square feet but less than 10 acres (75 foot buffer) must be conducted to retain sufficient vegetation to maintain shading of surface waters. Where the 300 acre drainage point extends below the beginning of second order streams, this section shall apply.

Because the current standards for determining if adequate shade exists are based on proxies, MFS will continue to work on developing an appropriate measure for shade.

Figure 1

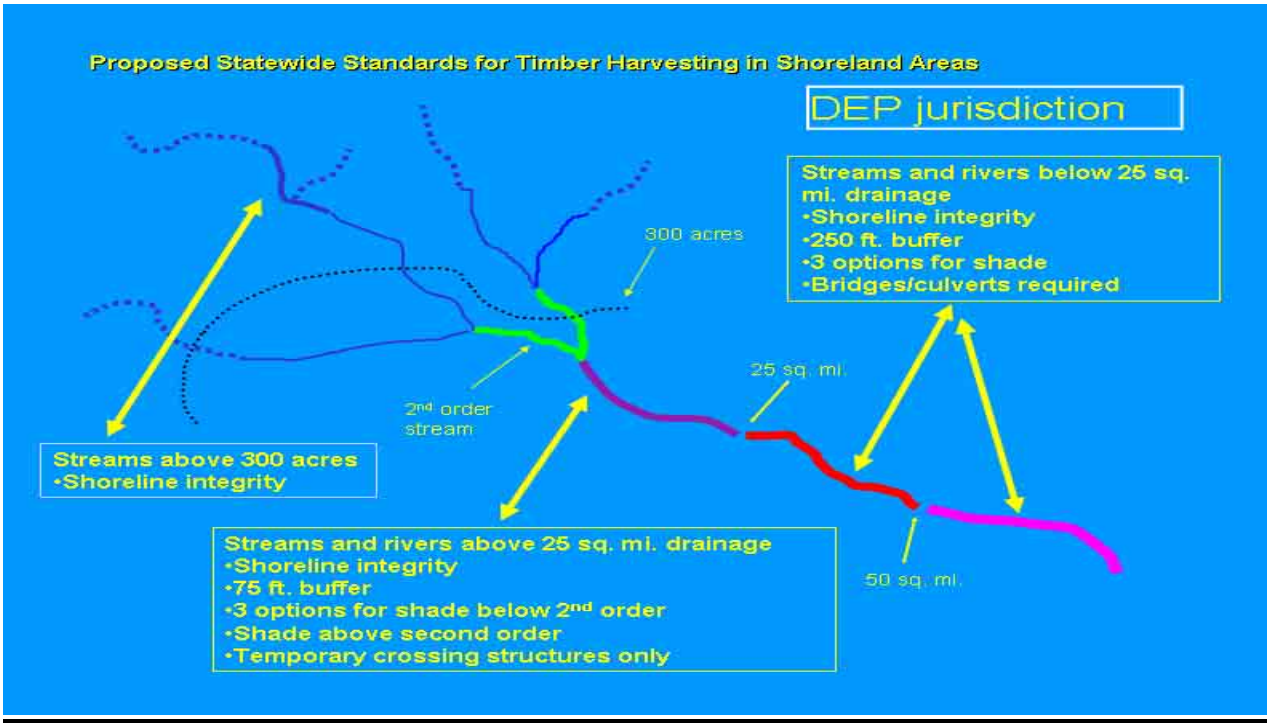


Figure 2

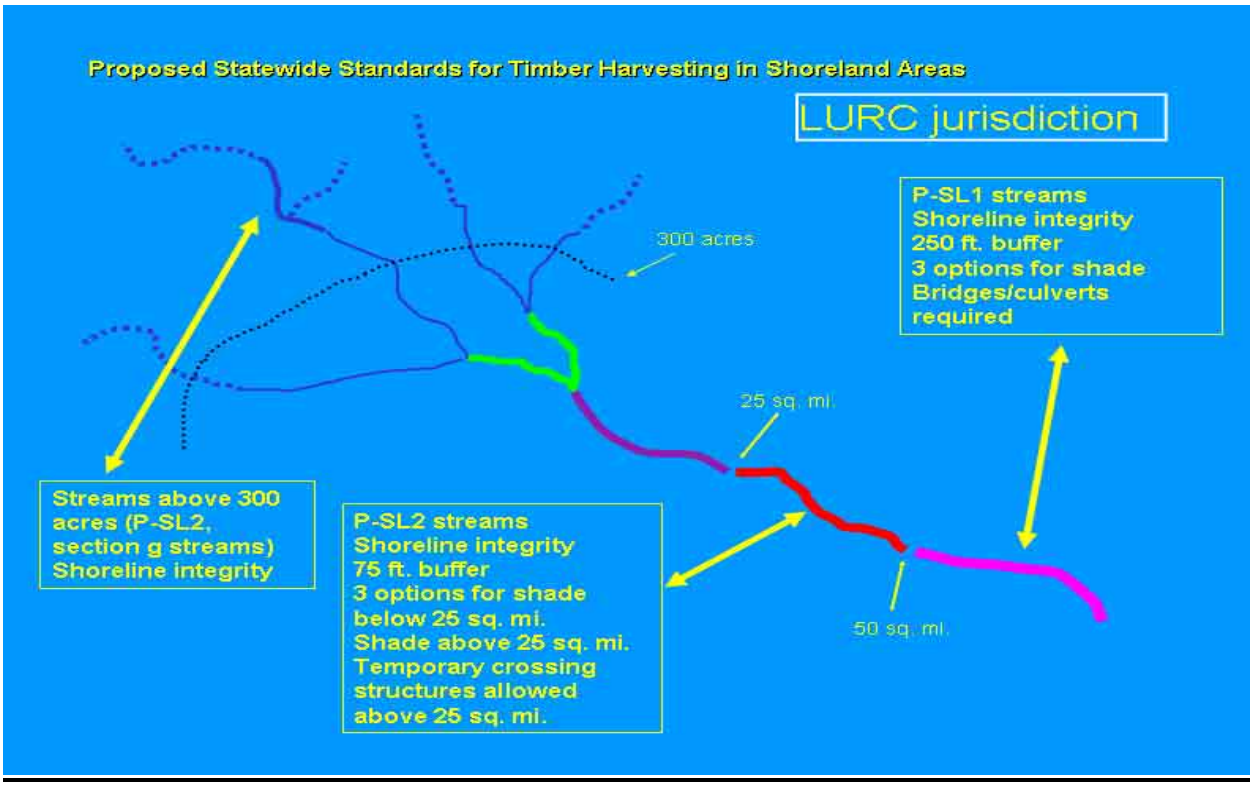
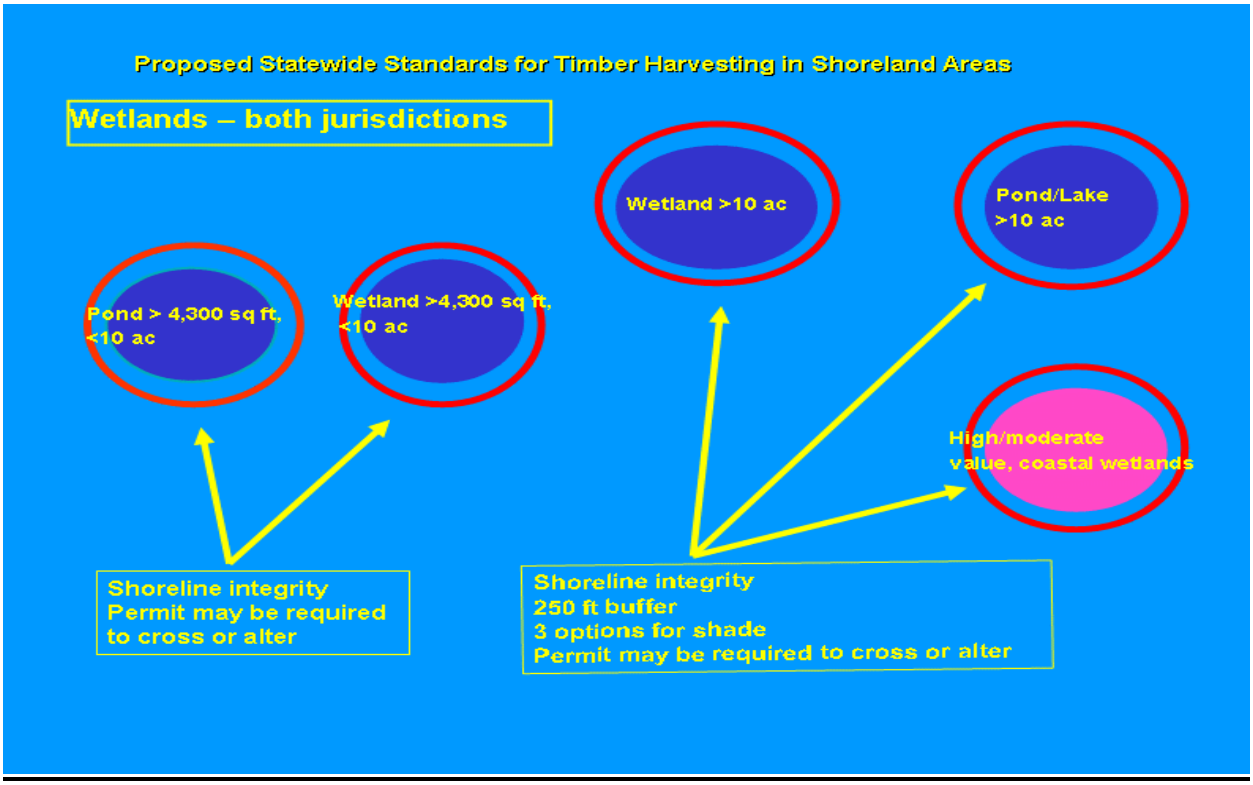


Figure 3


Proposed Statewide Standards for Timber Harvesting in Shoreland Areas
Wetlands – both jurisdictions
Pond > 4,300 sq ft, <10 ac
Wetland >4,300 sq ft, <10 ac
Shoreline integrity
Permit may be required to cross or alter
Wetland >10 ac
Pond/Lake >10 ac
High/moderate value, coastal wetlands
Shoreline integrity
250 ft buffer
3 options for shade
Permit may be required to cross or alter

Skid Trails and Equipment Operation

The following recommended standards are adapted largely from existing LURC standards with some adjustments for existing DEP standards regarding setbacks. The recommended standards are different from existing standards, but are, despite their length, much less prescriptive than existing standards and focus on the key desired outcomes:

- minimize sedimentation and disruption of shoreline integrity;
- reduce skid trail impacts on wildlife travel corridors and recreational and aesthetic values; and,
- allow operational flexibility without compromising public values.

MFS makes the following recommendations for standards in both the LURC and DEP jurisdictions.

A. STREAM CHANNELS. Timber harvesting equipment shall not use stream channels as travel routes except when:

1. **Surface waters are frozen and snow covered; and**
2. **The activity will not result in any ground disturbance.**

B. DESIGN, CONSTRUCTION, AND CLOSEOUT. Skid trails must be designed, constructed, and either revegetated or stabilized to prevent sediment and concentrated water runoff from directly entering the water body.

C. FILTER STRIPS.

1. **Except for stream crossings, sites where equipment operates, including but not limited to skid trails, must be located or designed to prevent the exposure of mineral soil within at least 25 feet of any water body or wetland regulated under this chapter. On slopes of 10 percent or greater, the setback for equipment operation must be increased by at least 20 feet, plus an additional 10 feet for each 5 percent increase in slope above 10 percent, but in no case may the setback be less than that indicated in the slope table presented in Appendix 3.**
2. **The provisions of this subsection apply only to a face sloping toward the water body or freshwater or coastal wetland, provided, however, that no portion of such exposed mineral soil on a back face is closer than 25 feet from the normal high water mark of a water body or upland edge of a freshwater or coastal wetland. The requirements of this subsection shall not apply to skid trail approaches to stream crossings.**
3. **Where such filter strip is impracticable, appropriate techniques shall reasonably be used to avoid sedimentation of the water body or wetland. Such techniques may include the installation of sump holes or settling basins, and/or the effective use of additional ditch relief culverts and ditch water turnouts placed to avoid sedimentation of the water body or wetland. If, despite such precautions, sedimentation or the**

disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

D. Skid Trail means a route repeatedly used by forwarding machinery or animal to haul or drag forest products from the stump to the yard or landing, with minimal excavation or new excavation (if on a pre-existing road).

E. Exception. Timber harvesting activities in shoreland areas of streams draining less than 300 acres and wetlands adjacent to such streams may be conducted in a manner not in conformity with the requirements of the foregoing subsections provided that such activities are reasonably conducted to avoid the occurrence of sedimentation of water. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

Land Management Roads

The following recommended standards are adapted largely from existing LURC standards with some adjustments for existing DEP standards regarding setbacks. The recommended standards are different from existing standards are, despite their length, much less prescriptive than existing standards and focus on the key desired outcomes:

- minimize sedimentation and disruption of shoreline integrity;
- reduce road impacts on wildlife travel corridors and recreational and aesthetic values; and,
- allow operational flexibility without compromising public values.

MFS makes the following recommendations for standards in both the LURC and DEP jurisdictions.

Land management roads must be designed, constructed, and maintained to meet the following standards.

A. Road design, construction, and maintenance. Land management roads, including approaches to stream crossings, ditches and other related structures, must be designed, constructed, and maintained to prevent sediment and concentrated water runoff from directly entering the water body or tributary stream.

B. Setbacks. Land management roads and associated ditches, excavation, and fill must be set back at least:

1. **100 feet from the normal high-water mark of a Great Pond or a river that flows to a Great Pond, P-SL1 streams in the LURC jurisdiction, rivers and streams draining more than 25 square miles in the DEP jurisdiction, ponds and freshwater wetlands 10 acres or larger, any coastal or tidal wetland, or any size pond or freshwater wetland rated as significant wildlife habitat or essential wildlife habitat statewide;**

2. **50 feet from the normal high water mark of streams draining more than 300 acres but less than 50 square miles in the LURC jurisdiction and rivers and streams below the 300 acre drainage but above the 25 square mile drainage point in the DEP jurisdiction; and,**
3. **25 feet from the normal high water mark of streams draining less than 300 acres and ponds or freshwater wetlands larger than 4,300 square feet but less than 10 acres that are not rated as significant wildlife habitat or essential wildlife habitat in both jurisdictions.**
4. **Exceptions.**
    a. **The minimum 100 foot setback specified in subsection 1 may be reduced to no less than 50 feet, if, prior to construction, the landowner or the landowner's designated agent makes a clear demonstration to the Bureau that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.**
    b. **The minimum 50 foot setback specified in subsection 2 may be reduced to no less than 25 feet, if, prior to construction, the landowner or the landowner's designated agent makes a clear demonstration to the Bureau that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.**
5. **On slopes of 10 percent or greater, the land management road setback must be increased by at least 20 feet, plus an additional 10 feet for each 5 percent increase in slope above 10 percent, but in no case may the land management road setback be less than that indicated in the slope table presented in Appendix 3.**
6. **New permanent land management roads are not permitted within the shoreland area along Significant River Segments as identified in 38 MRSA, Chapter 3, Sub-Chapter 1, Article 2-B, nor in Resource Protection Districts as identified in municipal shoreland zoning ordinances, unless, prior to construction, the landowner or the landowner's designated agent makes a clear demonstration to the Bureau that no reasonable alternative route exists outside the shoreland zone, and that the new**

road must be set back as far as practicable from the normal high water mark and screened from the river by existing vegetation.

C. Maintenance. Ditches, culverts, bridges, dips, water turnouts and other water control installations associated with roads must be maintained on a regular basis to assure effective functioning. Drainage structures shall, at a minimum, deliver a dispersed flow of water into an unscarified filter strip no less than the width indicated in the slope table set forth in [Appendix 3].

Where such filter strip is impracticable, appropriate techniques shall reasonably be used to avoid sedimentation of the water body or wetland. Such techniques may include the installation of sump holes or settling basins, and/or the effective use of additional ditch relief culverts and ditch water turnouts placed reasonably to avoid sedimentation of the water body or wetland. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

D. Road closeout and discontinuance. Maintenance of the water control installations required above must continue until the road is discontinued and put to bed by effective installation of water bars or other adequate road drainage structures at appropriate intervals, constructed to reasonably avoid surface water flowing over or under the water bar, and extending sufficient distance beyond the traveled way so that water does not reenter the road surface.

E. Upgrading existing roads. Extension or enlargement of presently existing roads must conform with the provisions of this section. Any nonconforming existing road may continue to exist and be maintained, as long as the nonconforming conditions are not made more nonconforming.

Exception: Extension or enlargement of presently existing roads need not conform to the setback requirements of subsections 4.a. and 4.b. if, prior to extension or enlargement, the landowner or the landowner's designated agent makes a clear demonstration to the Bureau that no reasonable alternative exists and that appropriate techniques will be used to prevent sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed to avoid sedimentation of the water body. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

F. Additional measures. In addition to the foregoing minimum requirements, reasonable provision must otherwise be made in the construction and maintenance of roads and stream crossings to avoid sedimentation of surface waters.

G. Notice to Bureau. Written notice of all land management road and water crossing construction activities related to timber harvesting activities in shoreland areas regulated under this chapter must be given to the Bureau prior to the commencement of such activities. Such notice must conform to the requirements of the Bureau.

H. Definition: Land Management Road means a route or track having a profile that requires the control of water flow and consisting of a bed of exposed mineral soil, gravel, or other surfacing materials constructed for, or created by, the passage of motorized vehicles and used primarily for timber harvesting activities, including associated log yards, but not including skid trails or skid roads.

Stream and Wetland Crossings

Water crossings by machinery have the greatest potential and documented actual impacts on many aspects of water quality. **MFS recommends the following standards.**

SKID TRAIL STREAM CROSSINGS

A. Design and Construction

1. **All temporary crossings of streams and rivers below the 25 square mile drainage point require a bridge or culvert sized at according to the requirements of subsection B below.**
2. **Streams above the 25 square mile drainage point may be crossed using temporary structures that are not bridges or culverts but which meet the requirements of the following section; or**
   a. **when stream channels are frozen and snow-covered; or**
   b. **when stream channels are composed of a hard surface which will not be eroded or otherwise damaged.**
3. **All skid trail or skid road crossings of streams must be designed, constructed, and maintained, such that:**
   a. **sedimentation of surface waters is reasonably avoided;**
   b. **there is no substantial disturbance of the stream bank or stream channel; and,**
   c. **fish passage is not impeded.**

B. Bridge and Culvert Sizing. The following requirements apply to skid trail or skid road stream crossings when surface waters are unfrozen:

1. **Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate 10 year frequency water flows or with a cross-sectional area at least equal to 2 1/2 times the cross-sectional area of the stream channel.**

2. **Bridge and culvert sizes may be smaller than provided in subsection 1 if techniques are effectively employed such that in the event of culvert or bridge failure, the natural course of water flow is maintained and sedimentation of the water body is avoided. Such techniques may include, but are not limited to, the effective use of any or all of the following:**
    a. **use of temporary skidder bridges;**
    b. **removing culverts prior to the onset of frozen ground conditions;**
    c. **using water bars in conjunction with culverts; or,**
    d. **using road dips in conjunction with culverts.**
3. **Culverts utilized in stream crossings must:**
    a. **be installed at or below stream bed elevation;**
    b. **be seated on firm ground;**
    c. **have soil compacted at least halfway up the side of the culvert;**
    d. **be covered by soil to a minimum depth of 1 foot or according to the culvert manufacturer's specifications, whichever is greater; and**
    e. **have a headwall at the inlet end which is adequately stabilized by rip-rap or other suitable means to reasonably avoid erosion of material around the culvert.**
4. **Stream crossings allowed under this section but located in flood hazard areas (i.e. A zones) as identified on a community's Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM) must be designed and constructed under the stricter standards contained in that community's National Flood Insurance Program (NFIP). For example, a crossing may be required to pass a 100-year flood event.**

C. Closeout. Upon completion of timber harvesting, or upon the expiration of a Forest Operations Notification, whichever is earlier, bridges and culverts installed for stream crossings by skid roads or skid trails must either comply with the standards for permanent stream crossings by land management roads or be removed, and areas of exposed soil revegetated or stabilized. Structures that are not bridges or culverts are removed immediately following timber harvesting, or, if frozen into the stream bed or bank, as soon as practical after snowmelt. Stream channels, banks and approaches to crossings of water bodies must be immediately stabilized on completion of harvest, or if the ground is frozen and/or snow-covered, as soon as practical after snowmelt. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

D. Nonforested wetlands. Skid trail crossings of nonforested wetlands, other than those areas below the normal high water mark of stand or flowing waters, must avoid non-forested wetlands and must maintain the existing

hydrology of non-forested wetlands, unless there are no reasonable alternatives, as determined by the Bureau.

E. Exception. Timber harvesting activities in shoreland areas of streams draining less than 300 acres and wetlands adjacent to such streams may be conducted in a manner not in conformity with the requirements of the foregoing subsections provided that such activities are reasonably conducted to avoid the occurrence of sedimentation of water. If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

LAND MANAGEMENT ROAD STREAM CROSSINGS

A. Design, construction, and maintenance. Land management road stream crossings, including approaches to stream crossings, ditches and other related structures, must be designed, constructed, and maintained to prevent sediment and concentrated water runoff from directly entering the water body or tributary stream.

B. Bridge and culvert sizing. The following requirements apply to land management road stream crossings.

1. **Bridges and culverts must be installed and maintained to provide an opening sufficient in size and structure to accommodate 10 year frequency water flows or with a cross-sectional area at least equal to 2 1/2 times the cross-sectional area of the stream channel.**
2. **Bridge and culvert sizes may be smaller than provided in subsection 1 if techniques are effectively employed such that in the event of culvert or bridge failure, the natural course of water flow is maintained and sedimentation of the water body is avoided. Such techniques may include, but are not limited to, the effective use of any or all of the following:**
    a. **removing culverts prior to the onset of frozen ground conditions;**
    b. **using water bars in conjunction with culverts; or,**
    c. **using road dips in conjunction with culverts.**
3. **Culverts utilized in stream crossings must:**
    a. **be installed at or below stream bed elevation;**
    b. **be seated on firm ground;**
    c. **have soil compacted at least halfway up the side of the culvert;**
    d. **be covered by soil to a minimum depth of 1 foot or according to the culvert manufacturer's specifications, whichever is greater; and**
    e. **have a headwall at the inlet end which is adequately stabilized by rip-rap or other suitable means to reasonably avoid erosion of material around the culvert.**

4. **Stream crossings allowed under this section but located in flood hazard areas (i.e. A zones) as identified on a community's Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM) must be designed and constructed under the stricter standards contained in that community's National Flood Insurance Program (NFIP). For example, a crossing may be required to pass a 100-year flood event.**

C. Road closeout and discontinuance. Maintenance of the water control installations required above must continue until the road is discontinued and put to bed. Upon completion of timber harvesting, or upon the expiration of a Forest Operations Notification, whichever is earlier, areas of exposed soil must be revegetated or stabilized. Stream channels, banks and approaches must be immediately stabilized on completion of harvest, or if the ground is frozen and/or snow-covered, as soon as practical after snowmelt. Crossings on discontinued roads must be put to bed by taking the following actions:

1. **Crossing structures must be appropriately sized or dismantled and removed in a manner that reasonably avoids sedimentation of the water body.**
2. **Any bridge or water crossing culvert in roads to be discontinued shall satisfy one of the following requirements:**
   a. **it shall be designed to provide an opening sufficient in size and structure to accommodate 25 year frequency water flows;**
   b. **it shall be designed to provide an opening with a cross-sectional area at least 3 1/2 times the cross-sectional area of the stream channel; or**
   c. **it shall be dismantled and removed in a fashion so as to reasonably avoid sedimentation of the water body.**

If, despite such precautions, sedimentation or the disruption of shoreline integrity occurs, such conditions must be corrected by the responsible party.

D. Notice to Bureau. Written notice of all land management road and water crossing construction activities related to timber harvesting activities in shoreland areas regulated under this chapter must be given to the Bureau prior to the commencement of such activities. Such notice must conform to the requirements of the Bureau.

E. Non-forested Wetlands. In addition to all requirements of this section, any timber harvesting activity involving the design, construction, and maintenance of land management roads through non-forested wetlands, other than those areas below the normal high water mark of standing or flowing waters, may require a permit from LURC, DEP, or the US Army Corps of Engineers.

The design and construction of land management road systems through non-forested wetlands, other than those areas below the normal high water mark of standing or flowing waters, must avoid non-forested wetlands and must maintain the existing hydrology of non-forested wetlands, unless there are no reasonable alternatives, as determined by the Bureau.

To maintain the existing hydrology of non-forested wetlands, road drainage designs must provide cross drainage of the water on the surface and in the top 12 inches of soil in non-forested wetlands during both flooded and low water conditions so as to neither create permanent changes in wetland water levels nor alter wetland drainage patterns. This must be accomplished through the incorporation of culverts or porous layers at appropriate levels in the road fill to pass water at its normal level through the road corridor. Where culverts or other cross-drainage structures are not used, all fills must consist of free draining granular material.

ALL CROSSINGS

A. Determination of flow. Provided they are properly applied and used for the circumstances for which they are designed, methods including but not limited to the following are acceptable to the Bureau as means of calculating the 10 year and 25 year frequency water flows and thereby determining crossing sizes as required in this section:

The United States Geological Survey (USGS) Methods; specifically: Hodgkins, G. 1999. Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals. U.S. Geological Survey. Water Resources Investigations Report 99-4008. 45 pp.

B. Upgrading existing crossings. Extension or enlargement of presently existing crossings must conform to the provisions of this section. Any nonconforming existing crossing may continue to exist and be maintained, as long as the nonconforming conditions are not made more nonconforming.

APPENDIX 1. RESOLVES, CHAPTER 101

H.P. 1632 - L.D. 2135

Resolve, Regarding Legislative Review of Chapter 21: Statewide Standards for Timber Harvesting in Shoreland Areas, a Major Substantive Rule of the Department of Conservation

Emergency preamble. Whereas, Acts and resolves of the Legislature do not become effective until 90 days after adjournment unless enacted as emergencies; and

Whereas, the Maine Revised Statutes, Title 5, chapter 375, subchapter II-A requires legislative authorization before major substantive agency rules may be finally adopted by the agency; and

Whereas, the above-named major substantive rule has been submitted to the Legislature for review; and

Whereas, immediate action on this resolve is necessary to record the Legislature's position on final adoption of the rule; and

Whereas, regulatory consistency continues to be an important public policy goal for the health of Maine's forest economy and natural resources; and

Whereas, in the judgment of the Legislature, these facts create an emergency within the meaning of the Constitution of Maine and require the following legislation as immediately necessary for the preservation of the public peace, health and safety;

now, therefore, be it

Sec. 1. Adoption not authorized. Resolved: That final adoption of Chapter 21: Statewide Standards for Timber Harvesting in Shoreland Areas, a provisionally adopted major substantive rule of the Department of Conservation, that has been submitted to the Legislature for review pursuant to the Maine Revised Statutes, Title 5, chapter 375, subchapter II-A is not authorized; and be it further

Sec. 2. Report. Resolved: That the Commissioner of Conservation, no later than January 2, 2003, shall report back to the joint standing committee of the Legislature having jurisdiction over forestry matters with recommendations for a regulatory framework and an implementation plan for the Maine Forest Service to assume existing responsibilities of the Department of Environmental Protection and the Maine Land Use Regulation Commission for timber harvesting in shoreland areas. The regulatory framework and implementation plan must allow municipalities to voluntarily accept the Maine Forest Service's authority for enforcement of timber harvesting standards in shoreland areas. The recommendations must be based on the purposes of the Maine Revised Statutes, Title 12, chapter 206-A and Title 38, chapter 3, and the sustainability standards established under Title 12, section 8876-A. The commissioner shall review the provisionally adopted rule submitted to the Legislature on February 15, 2002 and use that proposed rule as a starting point for conferring with interested parties and determining which provisions to recommend for implementation. The primary objectives of the review are to reduce inconsistencies in existing state laws and rules and to

consider a regulatory framework that is less prescriptive and more results-oriented when appropriate and that is balanced with existing environmental, land use and forest practices laws.

In conducting the review, the commissioner shall solicit input from representatives of the forestry industry, state agencies, municipalities, nonindustrial landowners, environmental groups, legislators and members of the public and shall provide ongoing public forums to discuss and receive input on the elements of the review and plan. The commissioner shall involve municipalities concerning their interests in developing and accepting greater statewide consistency of laws governing timber harvesting in shoreland areas. The commissioner shall notify the joint standing committee of the Legislature having jurisdiction over forestry matters of the public forums and shall provide interim reports to the committee throughout the review period. The interim reports must include information on the provisions that the department believes can be implemented based on discussions with the interested parties and provisions that require further discussion or guidance before implementation.

The final report must include proposed changes to existing laws and rules necessary to implement the regulatory framework and implementation plan; and be it further

Sec. 3. Legislation authorized. Resolved: That the joint standing committee of the Legislature having jurisdiction over forestry matters may report out a bill to the First Regular Session of the 121st Legislature to implement any or all of the provisions of the plan recommended under section 2 or revisions to the plan approved by the committee.

Emergency clause. In view of the emergency cited in the preamble, this resolve takes effect when approved.

Effective April 3, 2002.

APPENDIX 2. LIST OF TECHNICAL WORK GROUP PARTICIPANTS AND AFFILIATIONS

Nick Bennett, Natural Resources Council of Maine

Rob Bryan, Maine Audubon Society

Catherine Carroll, Land Use Regulation Commission (DOC)

Thomas Doak, Maine Forest Service (DOC)

Dawn Gallagher, Department of Conservation

Kirsten Hebert, Maine Municipal Association

Donald Mansius, Maine Forest Service (DOC)

Bill Miller, Prentiss & Carlisle Company

Morten Moesswilde, Maine Forest Service (DOC)

Mike Mullen, Department of Environmental Protection

Pat Sirois, Professional Logging Contractors of Maine

Gordon Stuart, Small Woodland Owners Association of Maine

Kevin Topolniski, Nexfor Fraser Papers, Ltd.

Peter Triandafillou, Huber Resources Corporation

Facilitator: Joe Michaels, Meetings by Michaels

APPENDIX 3. SLOPE TABLE

In addition to the minimum setbacks specified in earlier sections, filter strips, skid trail and skid road setbacks, and land management road setbacks must be adjusted according to the following slope table.

Average slope of land between exposed mineral soil and normal high water mark (percent)	Width of strip between exposed mineral soil and normal high water mark (feet along surface of the ground)
0	25
10	45
20	65
30	85
40	105
50	125
60	145
70	165

APPENDIX 4. DIFFERENCES IN CURRENT LAWS AND RULES ADDRESSED BY THE TECHNICAL WORK GROUP

Issue: Slash treatment

Shoreland Zoning: "No accumulation of slash shall be left within fifty (50) feet of the normal high-water line of a water body. In all other areas slash shall either be removed or disposed of in such a manner that it lies on the ground and no part thereof extends more than four (4) feet above the ground. Any debris that falls below the normal high-water line of a water body shall be removed." Slash is not defined in the Shoreland Zoning standards.

Protection and Improvement of Waters Act: "No person, firm, corporation or other legal entity may place, deposit or discharge, directly or indirectly into the inland waters or tidal waters of this State, or on the ice thereof, or on the banks thereof in such a manner that it may fall or be washed into these waters, or in such a manner that the drainage from any of the following may flow or leach into these waters, except as otherwise provided by law:

1. Forest products refuse. Any slabs, edgings, sawdust, shavings, chips, bark or other forest products refuse;…" (38 MRSA, § 417, sub- § 1). Slash is not defined in this law.

DEP interpretation: DEP would consider slash in any stream, including a dry, intermittent brook a violation of 38 MRSA § 417, since the water comes back eventually. There is no legal correlation between a stream and waters of the state, just the fact that a stream carries waters of the state at some point in time (otherwise, it's not a stream).

LURC: "No accumulation of slash shall be left within 50 ft of the NHWM of surface water protected by the P-SL1 and P-GP Protection Subdistricts. In such subdistricts, at distances greater than 50 ft from the NHWM of such waters, all slash larger than 3 in in diameter shall be disposed of in such a manner that no part thereof extends more than 4 ft above the ground.", and, "Timber harvesting operations shall be conducted in such a manner that slash is not left below the NHWM of standing or tidal waters, or below the NHWM of stream channels downstream from the point where such channels drain 300 acres or more." Slash is not defined in LURC rules.

Issue: DBH standards

Shoreland Zoning: In the 75 ft buffer along second order streams (some first order streams in some towns) and in the 250 ft buffer along rivers (below 25 sq mi drainage and around Great Ponds and wetlands > 10 acres), harvesting may remove no more than 40% of the volume of trees ≥ 4 in DBH.

LURC: In the 250 ft buffer around Great Ponds (P-GP) and along rivers (below 50 sq mi drainage, or P-SL1), harvesting may remove no more than 40% of the volume of trees ≥ 6 in DBH.

Forest Practices Act: Both the definition of a clearcut and the standards for a separation zone focus on the post-harvest basal area of trees ≥ 4.5 in DBH.

Issue: Cleared openings[7]

Shoreland Zoning (where 250 ft buffer applies): none permitted within 75 feet; at 75-250 feet, openings may not exceed 10,000 ft^2; openings > 5,000 ft^2 must be separated by at least 100 ft

Shoreland Zoning (where 75 ft buffer applies): none permitted.

LURC (where 250 ft buffer applies): none permitted within 50 ft.; at 50-250 ft., openings may not exceed 14,000 ft^2; openings > 10,000 ft^2 must be separated by at least 100 ft for lakes and ponds; no restriction, provided "shade" is maintained for scrub/shrub wetlands.

[7] DEP interprets a "cleared opening" to be anything larger than 250 sq ft.

LURC (where 75 ft buffer applies): no restrictions, but "shade" (undefined) must be maintained, except above the 300 acre drainage point.

Issue: Shoreline integrity (as it relates to timber harvesting, not skidder and road crossings)

LURC:

- 10.17. A. 5. a. Except when surface waters are frozen, skid trails and skid roads shall not utilize stream channels bordered by a P-SL1 Protection Subdistrict except to cross such channels with a culvert or bridge according to the water crossing requirements of Section 10.17 A. 4. b. and e.

- 10.17. A. 5. c. Except as provided in subsection g of this section, skid trails and other sites, where the operation of machinery used in timber harvesting results in the exposure of mineral soil, shall be located such that an unscarified filter strip of at least the width indicated below (slope table, not shown) is retained between the exposed mineral soil and the NHWM of surface water areas.

- 10.17. A. 5. e. Except when surface waters are frozen, skid trails and skid roads shall not utilize stream channels bordered by P-SL2 Protection Subdistricts except to cross the same by the shortest possible route, unless culverts or bridges are installed in accordance with Sections 10.17 A. 4. b. and e, such crossings shall only use channel beds which are composed of gravel, rock, or similar hard surface which would not be eroded or otherwise damaged. The requirements of this subsection e may be modified according to the provisions of subsection g of this section.

- 10. 17. A. 5. g. Timber harvesting operations in P-SL2 Protection Subdistricts along stream channels upstream from the point where they drain 300 acres or less, and in P-WL Protection Subdistricts adjacent to such P-SL2 Protection Subdistricts, may be conducted in a manner not in conformity with the requirements of the foregoing subsections c, e, and f provided that such operations are conducted so as to avoid the occurrence of sedimentation of water in excess of 25 Jackson Turbidity Units as measurable at the point where such stream channel drains 1 square mile or more. Jackson Turbidity Units are a standard measurement of the relative amount of light that will pass through a sample of water compared with the amount of light that will pass through a reference suspension; the Jackson Turbidity Unit measurement for water without turbidity is 0.

- 10. 17. A. 5. j. In addition to the foregoing minimum requirements, except as provided for in subsection g, provision shall otherwise be made in conducting timber harvesting operations in order to reasonably avoid sedimentation of surface waters.

Shoreland Zoning:

Section O. of guidelines

(1) In a shoreland area zoned for resource protection abutting a great pond, timber harvesting shall be limited to the following:
  (a) Within the strip of land extending 75 feet inland from the normal high-water line, timber harvesting may be conducted when the following conditions are met:
    (1) The ground is frozen;
    (2) There is no resultant soil disturbance;
    (3) The removal of trees is accomplished using a cable or boom and there is no entry of tracked or wheeled vehicles into the 75-foot strip of land;
    (4) There is no cutting of trees less than 6 inches in diameter; no more than 30% of the trees 6 inches or more in diameter, measured at 4 ½ feet above ground level, are cut in any 10-year period; and a well-distributed stand of trees and other natural vegetation remains; and
    (5) A licensed professional forester has marked the trees to be harvested prior to a permit being issued by the municipality.
  (d) Timber harvesting equipment shall not use stream channels as travel routes except when:
    (i) Surface waters are frozen; and
    (ii) The activity will not result in any ground disturbance.

(g) Except for water crossings, skid trails and other sites where the operation of machinery used in timber harvesting results in the exposure of mineral soil shall be located such that an unscarified strip of vegetation of at least seventy-five (75) feet in width for slopes up to ten (10) percent shall be retained between the exposed mineral soil and the normal high-water line of a water body or upland edge of a wetland. For each ten (10) percent increase in slope, the unscarified strip shall be increased by twenty (20) feet. The provisions of this paragraph apply only to a face sloping toward the water body or wetland, provided, however, that no portion of such exposed mineral soil on a back face shall be closer than twenty five (25) feet from the normal high-water line of a water body or upland edge of a wetland.

Erosion and Sedimentation Control Act: 38 MRSA, § 420-C. Erosion and sedimentation control.

A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in section 480-B.

Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken and the site must be maintained to prevent unreasonable erosion and sedimentation. [1997, c. 502, §1 (amd).] …

… Forest management activities, including associated road construction or maintenance, conducted in accordance with applicable standards of the Maine Land Use Regulation Commission, are deemed to comply with this section. This section may not be construed to limit a municipality's authority under home rule to adopt ordinances containing stricter standards than those contained in this section. [1995, c. 704, Pt. B, 2 (new); Pt. C, §2 (aff).]

Natural Resources Protection Act: 38 MRSA § 480-C.

1. Prohibition. A person may not perform or cause to be performed any activity listed in subsection 2 without first obtaining a permit from the department if the activity is located in, on or over any protected natural resource or is located adjacent to any of the following:

A. A coastal wetland, great pond, river, stream or brook or significant wildlife habitat contained within a freshwater wetland; or [1995, c. 460, §4 (rpr); §12 (aff).]

B. Freshwater wetlands consisting of or containing:

(1) Under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or

(2) Peatlands dominated by shrubs, sedges and sphagnum moss. [1995, c. 460, §4 (rpr); §12 (aff).]

A person may not perform or cause to be performed any activity in violation of the terms or conditions of a permit.

2. Activities requiring a permit. The following activities require a permit:

A. Dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials;

B. Draining or otherwise dewatering;

C. Filling, including adding sand or other material to a sand dune; or

D. Any construction, repair or alteration of any permanent structure.

§480-Q. Activities for which a permit is not required

A permit is not required for the following activities if the activity takes place solely in the area specified below: [1987, c. 809, §2 (new).] …

… 7-A. Forestry. Forest management activities, including associated road construction or maintenance, in or adjacent to an existing forested wetland, or a harvested forested wetland or adjacent to a protected natural resource pursuant to section 480-C, subsection 1, paragraphs A and B, as long as:

A. The activity results in a forest stand that meets the minimum stocking requirements in rules adopted pursuant to Title 12, section 8869. This requirement takes effect when those rules are adopted; [1989, c. 838, §6 (new).]

B. The activity meets permit-by-rule standards in rules adopted pursuant to this article for any road crossing of a river, stream or brook or for any soil disturbance adjacent to a protected natural resource pursuant to section 480-C, subsection 1, paragraphs A and B and the commissioner is notified before the forest management activity commences; [1989, c. 838, §6 (new).]

C. The forested wetland is not mapped as a significant wildlife habitat under section 480-I; and [1989, c. 838, §6 (new).]

D. Any road construction is not used to access development but is used primarily for forest management activities, unless the road is removed and the site restored to its prior natural condition. Roads must be the minimum feasible width and total length consistent with forest management activities. This exemption does not apply to roads that provide access to development in a subdivision as defined in Title 30-A, section 4401, subsection 4, for the organized portions of the State, or Title 12, section 682, subsection 2-A, including divisions of land exempted by Title 12, section 682-B, for portions of the State under the jurisdiction of the Maine Land Use Regulation Commission. [2001, c. 431, §6 (amd).] 2001, c. 431, §6 (amd).]

Issue: Shade and tree retention

- LURC
  - Large: 250’ buffer and 40% volume removal (in 10 yrs)
  - Medium: 75’ buffer
  - Small: optional above 300 acre drainage
- Organized towns
  - Large: 250’ buffer and 40%
  - Medium: beginning with 2nd order streams-- 75’ and 40%
  - Small: below 2nd order streams, no shade requirement